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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP  
901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

BOYD, JENNIFER A

ART UNIT PAPER NUMBER

1771

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/046,286

Applicant(s)

HORIKAWA, MITSUO

Examiner

Jennifer A. Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 28, 2005 has been entered. The Applicant's Amendments and Accompanying Remarks, filed October 28, 2005, have been entered and have been carefully considered. Claim 1 is amended and claims 1 – 5 are pending. In view of Applicant's arguments regarding how the core string is integrated into the fastener structure, the Examiner withdraws all previously set forth rejections. After a new search was conducted, additional prior art has been found which renders the invention as currently claimed unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1 – 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scarpini (US 4,458,391) in view of Matsuda et al. (US 6,006,552).

Scarpini is directed to a slide-fastener half and method of making the same (Title).

As to claim 1, Scarpini teaches a tape as shown in Figure 1 comprising a main portion

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comprising warp threads 2 and weft threads 3, a carrier cord 4 and two special warp threads 5 and 6 (column 2, lines 30 – 45). The Examiner equates the main portion comprising warp and weft threads to Applicant's "tape main portion", the area indicated by core carrier cord 4 and warp threads 5 and 6 to Applicant's "element-mounting edge portion" and the opposite side of the main portion to Applicant's "edge portion". Additionally, the Examiner equates the carrier cord to Applicant's "core string". As shown in Figure 1, the tape is woven.

As to claim 2, Scarpini shows in Figure 1 that the warp of the element-mounting edge is consisting of two paralleled yarns.

Scarpini fails to teach that the main tape portion, or "foundation warp", has a lower thermal contraction coefficient than warps used for the flexible yarns or "warp disposed between core string and tape main portion", the flexible yarns or "warp disposed between core string and tape main portion" have a thermal contraction coefficient greater than main tape portion, or "foundation warp" and lower than the "core string", and the "core string" has the highest thermal contraction coefficient than all the warps.

Matsuda et al. is directed to knitted slide fastener (Title). The slide fastener includes a successive fastener element row fixed by at least a wale of fixing knitting yarn, the fastener element row being knitted, simultaneously with knitting of a fastener tape, into a fastener element attaching portion at a longitudinal side edge portion of the fastener tape formed of a warp-knit foundation structure. The foundation structure of the fastener element attaching portion is formed of at least a part of the fixing knitting yarns and other knitting yarns. All of the

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knitting yarns have heat contraction rates higher than at least that of the knitting yarns forming the foundation structure of the fastener tape main body portion. In this slide fastener, by setting a relationship between respective heat contraction rate of yarns forming the fastener element attaching portion and the fastener element row in the above manner, the yarns forming the fastener element attaching portion contract more largely than the yarns forming the fastener tape main body portion through a heat treatment after knitting. The shape of the fastener element attaching portion is further stabilized, the fastener element has a high coupling strength and the hand and appearance of the fabric is improved (column 2, lines 20 – 65). Additionally, the fastener element becomes substantially straight or the element row slightly curves to project inward, thereby facilitating succeeding operations such as sewing of the completed fastener (column 3, lines 1 – 14). The warp in-laid yarn have a thermal contraction rate between 15 – 40%, the fixing chain stitch yarns have a rate of 10 – 30% and the fastener element row has a rate of 3 – 18% (column 6, lines 35 – 69). Matsuda teaches the use of polyester for the slide fastener components.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the fastener tape of Scarpini with polyester yarns having the relative thermal contraction rates of Matsuda motivated by the desire to create a fastener tape having high stability, high coupling strength and improved hand and appearance.

As to claim 3, Scarpini in view of Matsuda et al. discloses the claimed invention except for that the value of tex of the foundation warp in the tape main portion is set to be larger than the value of tex of the yarn composing the warp disposed between the core string and the tape

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main portion. It should be noted that the tex value of yarns is a result effective variable. For example, as the value of tex increases, the yarn and material become stronger and more dimensionally stable. As the value of tex decreases, the yarn and material becomes more pliable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a fastener stringer with the value of tex of the foundation warp in the tape main portion is set to be larger than the value of tex of the yarn composing the warp disposed between the core string and the tape main portion as required by claim 3 and the value of tex of the total thickness of the two paralleled yarns of the weft is set to be smaller than the value of tex of the total thickness of the two paralleled warp adjacent to the core string since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the tex of the foundation warp and the element-mounting edge portion warp to allow maximum flexibility to allow easy connection to a garment, for instance, and sturdiness on the edge portion next to the core string to ensure proper strength when zipping.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scarpini (US 4,458,391) in view of Matsuda et al. (US 6,006,552), as applied above to claim 1, and further in view of Frohlich et al. (US 4,334,556).

Scarpini in view of Matsuda teaches the claimed invention above but fails to teach that the weft is composed of two paralleled yarns.

Frohlich is directed to a woven slide fastener stringer (Title). Frohlich teaches that a soft and flexible stringer tape with good characteristics when subjected to bending or buckling

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stresses results when the fastener stringer is made with two double-pick weft insertions (column 6, lines 45 – 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a double-pick weft as suggested by Frohlich in the tape of Scarpini in view of Matsuda motivated by the desire to create a soft and flexible tape with good characteristics when subjected to bending or buckling stresses.

As to claim 4, Scarpini in view of Matsuda and Frohlich discloses the claimed invention except for that the value of tex of the total thickness of the two paralleled yarns of the weft is set to be smaller than the value of tex of the total thickness of the two paralleled warp adjacent to the core string. It should be noted that the value of tex and thickness of yarns is a result effective variable. For example, as the value of tex or thickness increases, the yarn and material become stronger and more dimensionally stable. As the value of tex or thickness decreases, the yarn and material becomes more pliable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a fastener stringer with the value of tex of the total thickness of the two paralleled yarns of the weft is set to be smaller than the value of tex of the total thickness of the two paralleled warp adjacent to the core string since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the tex and thickness to allow maximum flexibility to allow easy connection to a garment, for instance, and sturdiness on the edge portion next to the core string to ensure proper strength when zipping.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scarpini (US 4,458,391) in view of Matsuda et al. (US 6,006,552), as applied above to claim 1, and further in view of Matsushima (US 6,505,652).

Scarpini in view of Matsuda teach the claimed invention above but fails to teach that the main tape warp, the element-mounting edge portion warp and main tape weft are composed of a textured yarn.

Matsushima teaches a fastener tape comprising a woven material containing a main tape portion 4, a core string 9 and flexible yarns 6 (See Figure 1 and column 3, lines 25 – 65). Matsushima discloses that that the flexible yarns 6 are bulked (column 3, lines 50 – 55) and the core string 9 is a multi-filament twisted yarn (column 3, lines 60 – 65), which result in textured yarns. Matsushima notes that the texturing of the yarns maintains the stability of the fastener tape (Abstract). Matsushima fails to teach that the warp yarns 2 and weft yarns 3 of the main tape portion 4 comprise textured yarn. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a slide fastener tape with warp yarns 2 and weft yarns 3 of the main tape portion 4 comprise textured yarn since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. In the present invention, one would have been motivated to use textured yarns for the warp and weft yarns of the main tape portion and the warp yarns of the element-mounting edge portion to improve the stability of the fastener tape.

***Response to Arguments***

6. Applicant's arguments filed October 28, 2005 have been fully considered but they are not persuasive.

Applicant argues that Matsuda fails to suggest a core string of any kind and additionally does not disclose a core string having a higher thermal contraction coefficient than all warps. Although Matsuda does not disclose a core string, Matsuda does suggest setting a relationship between respective heat contraction rates of yarns forming the fastener tape (see Matsuda, column 2, lines 45 – 65). Matsuda teaches that, by setting the relationship of heat contraction rates, the fastener tape will be stabilized and have high coupling strength among other advantageous properties. The Examiner submits that this teaching provides sufficient motivation to create the slide fastener tape of Scarpini (which does discuss a core string) with the heat contraction relationship as suggested by Matsuda. It should be noted that the obviousness of an invention cannot be established by combining the teachings of the prior art references absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This does not mean that the cited prior art references must specifically suggest making the combination. *B.F. Goodrich Co. v. Aircraft Braking Systems Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)). Rather, the test for obviousness is what the combined teachings of the prior art references would have suggested to those of ordinary skill in the art. *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). This test requires us to take into account not only the specific teachings of the

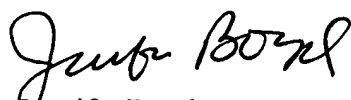
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prior art references, but also any inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jennifer Boyd  
January 9, 2006

  
**Ula C. Ruddock**  
Primary Examiner  
Tech Center 1700